

Claims

[c1]

What is claimed is:

1.A method for printing a color image with an ink jet printer,
the ink jet printer comprising:

a printhead having printing nozzles arranged in first, second,
and third columns extending in a first direction;

wherein nozzles in the first column are supplied with light
magenta ink;

wherein nozzles in the second column are divided into first,
second, and third sections, nozzles of the first section being
supplied with dark magenta ink, nozzles of the second section
being supplied with dark cyan ink, and nozzles of the third
section being supplied with yellow ink;

wherein nozzles in the third column are supplied with light
cyan ink;

wherein the first, second, and third columns each have a
length approximately equal to $3 \cdot H$, where H represents a
length of each of the first, second, and third sections of the
second column;

the method comprising:

ejecting ink from the nozzles of the first, second, or third
sections of the second column during each pass of the
printhead over a printing medium as necessitated by
characteristics of the color image;

advancing the printing medium in the first direction by a distance approximately equal to H; and
ejecting ink from the nozzles of the first and third columns during every third pass that the printhead makes over the printing medium as necessitated by the characteristics of the color image.

[c2] 2.The method of claim 1 wherein ink from the nozzles of the first and third columns are both printed during same passes that the printhead makes over the printing medium.

[c3] 3.The method of claim 1 wherein ink from the nozzles of the first and third columns are printed in different passes that the printhead makes over the printing medium.

[c4] 4.The method of claim 1 wherein the first, second, and third columns have an equal number of nozzles.

[c5] 5.The method of claim 4 wherein the first, second, and third sections of the second column have an equal number of nozzles.

[c6] 6.The method of claim 1 wherein the second column is a central column with the first and third column arranged on either side of the second column.

[c7] 7.The method of claim 1 wherein the nozzles of the second column are arranged in the sequence of the first section, the

second section, and the third section.

- [c8] 8.A method for printing a color image with an ink jet printer, the ink jet printer comprising:
- at least one printhead having printing nozzles arranged in first, second, and third columns extending in a first direction;
 - wherein nozzles in the first column are supplied with light magenta ink;
 - wherein nozzles in the second column are divided into first, second, and third sections, nozzles of the first section being supplied with dark magenta ink, nozzles of the second section being supplied with dark cyan ink, and nozzles of the third section being supplied with yellow ink;
 - wherein nozzles in the third column are supplied with light cyan ink;
 - wherein the first, second, and third columns each have a length approximately equal to $3 \cdot H$, where H represents a length of each of the first, second, and third sections of the second column;
 - the method comprising:
 - detecting a defective nozzle in the first or second section of the second column;
 - ejecting ink from the nozzles of the first, second, or third sections of the second column during each pass of the printhead over a printing medium as necessitated by

characteristics of the color image;
compensating for the defective nozzle in the first or second
section of the second column by ejecting ink two times from
compensating nozzles in the first or third column, respectively;
and
advancing the printing medium in the first direction by a
distance approximately equal to H.

[c9] 9.The method of claim 8 further comprising normally ejecting
ink from the nozzles of the first and third columns during every
third pass that the printhead makes over the printing medium
as necessitated by the characteristics of the color image.

[c10] 10.The method of claim 8 wherein compensating for the
defective nozzle comprises ejecting ink from the compensating
nozzles in each of two separate passes.

[c11] 11.The method of claim 10 wherein the nozzles of the first and
third columns normally eject ink during passes that are not
used for compensating for the defective nozzle.

[c12] 12.The method of claim 8 wherein the first, second, and third
columns have an equal number of nozzles.

[c13] 13.The method of claim 12 wherein the first, second, and third
sections of the second column have an equal number of
nozzles.

- [c14] 14.The method of claim 8 wherein the second column is a central column with the first and third column arranged on either side of the second column.
- [c15] 15.The method of claim 8 wherein the ink jet printer is capable of automatically detecting the defective nozzle.
- [c16] 16.The method of claim 8 wherein a color saturation and lightness level value for dark magenta ink is approximately two times a color saturation level value for light magenta ink.
- [c17] 17.The method of claim 8 wherein a color saturation and lightness level value for dark cyan ink is approximately two times a color saturation level value for light cyan ink.
- [c18] 18.The method of claim 8 wherein the nozzles of the second column are disposed in a first printhead, and the nozzles of the first and third columns are disposed in a second printhead.
- [c19] 19.The method of claim 8 wherein the nozzles of the second column are arranged in the sequence of the first section, the second section, and the third section.